

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1-17. (Cancelled)

18. (Previously Presented) In an apparatus comprising a device for the detection of an object contained in a work area, wherein a tag element is affixed to a larger-sized said object, the improvement comprising:

a first electronic circuit, coupled to a transmit/receive antenna, configured to emit either one of pulse-width varying wideband interrogation signals or voltage varying interrogation signals,

wherein the tag element is adapted to respond to electromagnetic excitation by each pulse of an interrogation signal with a relatively small narrow return signal centered about a specific, but not predetermined frequency;

a second electronic circuit, coupled to said transmit/receive antenna, having wideband receiver compatibility comprising means for optimal reception; and

a signal processor to transform the return signals into a resulting narrowband return signal having sufficient intensity to be distinguishable from ambient noise.

19. (Original) The apparatus according to claim 18, wherein the work area is a surgical site and the tag element is of such relatively small size as not to impede the functional use of an object to which it is affixed, the object being either deformable or non-deformable.

20. (Previously Presented) The apparatus according to claim 18, wherein the first and second electronic circuits are contained in a handle portion to which the transmit/receive antenna is connected, the handle portion and the transmit/receive antenna constituting a hand-held scanning detection device.

21. (Previously Presented) The apparatus according to claim 20, wherein the transmit/receive antenna includes plural ring-shaped antennas for the emitting of a pulsed wideband signal as an electromagnetic signal, the pulsed wideband signal being emitted successively in each coordinate direction of a multi-directional coordinate system employed.

22. (Previously Presented) The apparatus according to claim 21, wherein the antenna portion includes three mutually orthogonal antenna rings for the transmitting of the electromagnetic signal in the X, Y and Z -directions, respectively, of an X, Y and Z-coordinate system, the transmitting of the electromagnetic signal being such that only one of the three antenna rings is transmitting at any one time.

23. (Original) The apparatus according to claim 22, wherein the tag element is a low Q tag element.

24. (Original) The apparatus according to claim 18, wherein the tag element is a low Q tag element.

25-29. (Cancelled)

30. (Previously Presented) In an apparatus comprising a device for the detection of an object contained in a work area, wherein a tag element is affixed to a larger-sized said object, the improvement comprising:

a first electronic circuit, coupled to a transmit/receive antenna, configured to emit an interrogation signal series comprised of electromagnetic pulses of varying frequency,

wherein the tag element is adapted to respond with a return signal to excitation at a specific but not predetermined frequency corresponding to the frequency of a pulse in the interrogation signal series;

a second electronic circuit, coupled to said transmit/receive antenna, having wideband receiver compatibility; and

a signal processor to transform the return signals into a resulting narrowband return signal having sufficient intensity to be distinguishable from ambient noise.

31. (Previously Presented) An apparatus according to claim 30 in which pulsed wideband signals are emitted by the first means in a time-wise successive manner in each coordinate of a multi-directional coordinate system.

32. (Previously Presented) An apparatus according to claim 31, in which the antenna portion includes plural antenna rings for the emitting of a pulsed wideband signal as an electromagnetic signal in each coordinate direction of the multi-directional coordinate system employed.

33. (Previously Presented) The apparatus according to claim 32, wherein the antenna portion includes three mutually orthogonal antenna rings for the transmitting of the

electromagnetic signal in the X, Y and Z –directions, respectively, of an X, Y and Z –coordinate system, the transmitting of the electromagnetic signal being such that only one of the the three antenna rings is transmitting at any one time.

34. (Previously Presented) The apparatus according to claim 30, wherein the first means includes an electronic portion configured to produce pulse-width varying wideband signals.

35. (Previously Presented) The apparatus according to claim 30, wherein the first means includes an electronic portion configured to produce voltage-modulated wideband signals.

36. (Previously Presented) The apparatus according to claim 30, wherein the first means includes an electronic portion configured to produce pulsed wideband signals in which one of either the voltage levels of pulses are varied over time or pulse width variation is effected over time to enhance discrimination of the tag element response signals from ambient noise.

37. (Previously Presented) The apparatus according to claim 30,  
wherein the first mean includes an electronic portion configured to produce either one of pulse-width varying wideband interrogation signals or voltage- varying wideband interrogation signals, and

wherein the second means includes (i) a second electronic portion configured to receive and analyze the narrowband return signals, the second electronic portion including a

wideband receiver containing filter and pre-amplifier circuits to reduce noise bandwidth of incoming signals and increase detection range of the interrogation and detection member, and (ii) a signal processor to transform the response signals into a resulting narrowband return signal having sufficient strength to be distinguishable from ambient noise.

38. (Previously Presented) The apparatus according to claim 30, wherein the tag element is a low Q tag element.

39. (Previously Presented) In an apparatus comprising a device for the detection of an object contained in a work area, where a tag element is affixed to a larger-sized said object, the improvement comprising:

a first electronic circuit, coupled to a transmit/receive antenna, configured to emit an interrogation signal series comprised of broadband electromagnetic pulses of varying center frequency,

wherein the tag element is adapted to respond to at least one pulse in the interrogation series with a return signal at a specific but not predetermined frequency;

a second electronic circuit, coupled to said transmit/receive antenna, having wideband receiver compatibility; and

a signal processor to transform the return signals into a resulting narrowband return signal having sufficient intensity to be distinguishable from ambient noise.